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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/624,106	07/24/2000	Pietro Buttolo	200-0032	6480

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EXAMINER

BRODA, SAMUEL

ART UNIT	PAPER NUMBER
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2123

6

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No</b>	<b>Applicant(s)</b>	
	09/624,106	BUTTOLO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Samuel Broda	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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### DETAILED ACTION

1. This communication is in response to Applicant's Response to Official Action and Request for Reconsideration mailed on 2 April 2004. Claim 1 was amended; claim 3 was canceled; claims 10-12 were added. Claims 1-2 and 4-12 are pending.

#### *Claim Rejections - 35 U.S.C. § 112, First Paragraph*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.1 Claims 1-2 and 4-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the Specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the Application was filed, had possession of the claimed invention.

2.2 Regarding independent claim 1, Applicant amended the step limitation from "removing said duplicates of vertices" to "removing said duplicates of vertices without decimation of non-duplicate vertices" (emphasis added) in order to traverse a prior art rejection. In the Remarks at page 5 lines 1-3, Applicant states that, "Thus, with the present invention, the duplicate vertices are removed without decimation of any non-duplicate vertices or other information."

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However, the Remarks do not supply a citation to the Specification describing the amended limitation and the Examiner was unable to locate support in the Specification.

Applicant could traverse this rejection by supplying either:

- (1) support in the Specification for the amended limitation, or
- (2) objective evidence indicating one skilled in the art would understand how the amended limitation is inherent in the method disclosed in the Specification.

**2.3** Regarding claims 2 and 4-9, these claims are rejected based on their dependency to independent claim 1.

***Claim Rejections - 35 U.S.C. § 102***

**3.** The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

...

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**3.1** Claims 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Schroeder et al, "Decimation of Triangle Meshes," Proceedings of the 19<sup>th</sup> Annual Conference on Computer Graphics and Interactive Techniques, Vol. 26 No. 2, pp. 65-70 (July 1992).

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**3.2** Regarding claim 10, Schroeder et al teaches a method for fixing holes in topological information for a mesh, the mesh comprising a polygonal soup of triangles with sides and vertices, the method comprising the steps of:

building vertex and edge connectivity data [characterizing the local vertex geometry and topology, Sections 3.1 and 3.2, page 66];

finding duplicates of vertices [duplicate vertices classified as: {simple, complex, boundary, interior edge, corner}, Fig. 1 page 66];

removing the duplicates of vertices [duplicates removed during decimation step, Sections 3.2 – 3.4, pages 66-67]; and

realigning strips of triangles without common vertices [realignment performed after decimation in triangulation step, Section 3.4 and 4.2, page 67].

Therefore, Schroeder et al anticipates claim 10.

**3.3** Regarding claim 11, the method of Schroeder et al generates a representative index corresponding to the vertex classification (see Fig. 1, page 66) and generates a data structure including a vertex-neighbor table and edge-neighbor table (see Section 4.1, page 67).

#### ***Applicant's Arguments***

**4.** Applicant argues in the Remarks at pages 5-7 that the amended claims are statutory under Section 101, that the claim amendment to claim 1 traverses the prior claim rejections under

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Section 102, and that new claims 10-12 are also fully distinguished from the prior art used in the Section 102 rejections.

*Examiner's Reply*

5. Regarding the rejections to claims 1-9 under Section 101, the rejections to claims 1-3 under Section 102, and the rejection to claim 3 under Section 112(2), these rejections are withdrawn. However, as described above in Section 2, the amendment to claim 1 appears to introduce new subject matter into claims 1-2 and 4-9.

Regarding Applicant's argument regarding the patentability of new claims 10-12, claims 10-11 are rejected using the previously cited prior art because the claim limitations are identical to the previously-presented claim 1. Applicant's argument regarding patentability appears to rely on giving patentable weight to the preamble of claim 10.

The preamble statement "a computer-implemented method for fixing holes in topological information" does not appear to give 'life, meaning, and vitality' to the claim, but instead appears to be reciting the purpose or intended use of the invention. Therefore, the preamble is not given patentable weight. See MPEP § 2111.02.

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*Allowable Subject Matter*

6. Claim 12 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 102, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

*Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.
8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samuel Broda, whose telephone number is (703) 305-1026. The Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.

A handwritten signature in black ink, appearing to read 'S. Broda'.

**SAMUEL BRODA, ESQ.  
PRIMARY EXAMINER**